

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: James A. Thomson

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Serial No.:

Art Unit:

Filed: Herewith

Examiner:

Title: PRIMATE EMBRYONIC STEM CELLS

File No.: 960296.97877

PRELIMINARY AMENDMENT

Commissioner For Patents
Washington, D.C. 20231

Dear Sir:

In conjunction with the filing this continuation application, please amend the application as follows:

In the Specification:

Please delete the entire paragraph under the heading "CROSS REFERENCES TO RELATED APPLICATIONS," page 1, lines 3-6 and insert therefor the following:

--This application is a continuation of US Serial No. 09/761,289 filed January 16, 2001, which was a continuation of US Serial No. 09/106,390 filed June 26, 1998, which issued as US Patent No. 6,200,806 on March 13, 2001, which was a divisional of US Serial No. 08/591,246 filed January 18, 1996, and issued as US Patent No. 5,843,780 on December 1, 1998, which was a continuation-in-part of US Serial No. 08/376,327 filed January 20, 1995.--

In the Claims:

Please cancel Claims 1-11, and substitute therefor the following new Claims 12-19.

12. A preparation of pluripotent human embryonic stem cells comprising cells which (i) will proliferate *in vitro* culture for over one year, (ii) maintain a karyotype in which the chromosomes are euploid through prolonged culture, (iii) maintain the potential to differentiate to derivatives of endoderm, mesoderm, and ectoderm tissues throughout the culture, and (iv) are inhibited from differentiation when cultured on a fibroblast feeder layer.

13. The preparation of claim 12, wherein the stem cells will spontaneously differentiate to trophoblast and produce chorionic gonadotropin when cultured to high density.

14. A preparation of pluripotent human embryonic stem cells comprising cells which are negative for the SSEA-1 marker, positive for the SSEA-4 marker, express alkaline phosphatase activity, are pluripotent, and have euploid karyotypes and in which none of the chromosomes are altered.

15. The preparation of claim 14, wherein the cells are positive for the TRA-1-60, and TRA-1-81 markers.

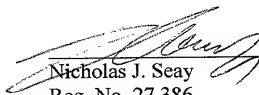
16. The preparation of claim 14, wherein the cells continue to proliferate in an undifferentiated state after continuous culture for at least one year.

17. The preparation of claim 14, wherein the cells will differentiate to trophoblast when cultured beyond confluence and will produce chorionic gonadotropin.

18. The preparation of claim 14, wherein the cells remain euploid for more than one year of continuous culture.

19. The preparation of claim 14, wherein the cells differentiate into cells derived from mesoderm, endoderm and ectoderm germ layers when the cells are injected into a SCID mouse

Respectfully submitted,



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